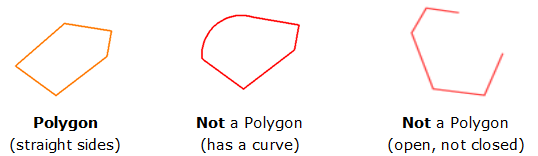
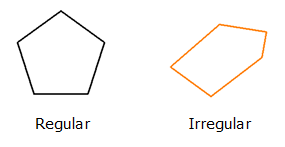
Introduction to Chapter 4

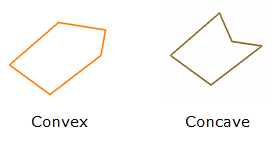
Vocabulary and concepts

**Congruent**. Congruent means equal or equivalent. Line segments, angle measures and even geometric objects like triangles can be congruent. If an object is congruent to another object it means that **every part of the object is congruent with the corresponding part of the other object.**

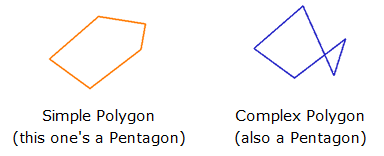
**Polygon.** A many-sided figure (three sides or more). A polygon has **straight sides** and is a **closed figure.**

If all the angles and side of a polygon are equal then we call it a **regular polygon.** Otherwise it is **irregular.**

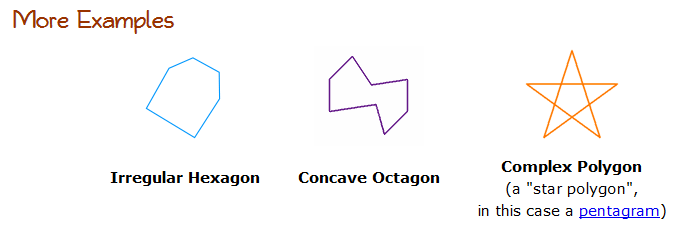


Polygons are also either **concave** or **convex.** A concave polygon has at least one angle pointing “inward”. A convex polygon has no angles pointing inward.

Finally, polygons are either **simple** or **complex**. A simple polygon only has one boundary (it does not cross over itself). A complex boundary, on the other hand, intersects itself.



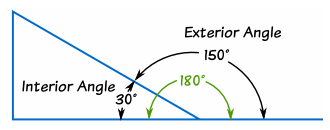
These types of polygons can be combined, of course. Some examples are below.



You can try your hand at making polygons at this location: http://www.mathsisfun.com/geometry/polygons-interactive.html

Refer to the handout(s) you got for chapter one for the names of common polygons.

**Interior angles**. Interior angles are the angles on the *inside* of the polygon. Exterior angles are formed by continuing a straight line out from a vertex of a polygon. (See below.) An interior angle and its paired exterior angle always add up to 180°.



**Ratio**. A ratio is two numbers expressed as a fraction: or for example, or separated by a colon, as with 4:7 or 2:1 (read as “four to seven” and “two to one”). Many mathematical terms are expressed as ratios including slope; trig functions like sine, cosine and tangent; and statistical odds like the chances of winning the lottery.

**Corresponding sides.** In congruent polygons the sides that match or “go together”.

**Corresponding angles**. In congruent polygons the angles that match or “go together”.